

CLAIMS:

1. A float system for use with a rotation motor that rotates a rotatably-supported body, the rotation motor having first and second ports for receiving and discharging pressurized media supplied from a source thereof, the float system

5 comprising:

a valve interposed between a first media line connected to the first port of the rotation motor and a second media line connected to the second port of the rotation motor; and

10 a control mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second media lines are substantially isolated from one another and an open position wherein the first and second media lines are in communication with one another to allow equalization of pressure between the first and second ports of the rotation motor.

15 2. The float system set forth in claim 1, wherein the rotational float system places the rotation motor in a float condition that permits the rotatably-supported body to rotate toward a side load when the valve is in the open position.

20 3. The float system as set forth in claim 1, the valve comprising a pair of poppet-type solenoid valves in fluid communication with one another between the first and second media lines.

25 4. The float system as set forth in claim 1, the valve comprising a blocking valve interposed between the first and second media lines.

5. The float system as set forth in claim 1, the control mechanism comprising a switch for electrically controlling switching of the valve between the closed and the open positions.

30 6. The float system as set forth in claim 1, the pressurized media comprising hydraulic fluid.

7. The float system as set forth in claim 1, further including a tilt switch operatively coupled with the control mechanism for preventing the control mechanism from switching the valve to the open position whenever the rotatably-supported body is tilted in excess of a predetermined slope.

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8. The float system as set forth in claim 1, further including an indicator operatively coupled with the control mechanism for indicating when the control mechanism has switched the valve to the open position.

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9. The float system as set forth in claim 8, the indicator including an audible alarm or a visible alarm.

10. The float system as set forth in claim 1, further including an electrical relay interposed between the control mechanism and the valve.

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11. The float system as set forth in claim 1, further including a flow control device positioned in-line with the valve for controlling a rate at which the valve allows equalization of pressure between the first and second ports of the rotation motor when the valve is switched to the open position.

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12. A rotation drive mechanism for driving a rotatably supported body which is subject to undesirable side loads, the drive mechanism comprising:

a rotation motor having first and second ports for receiving and discharging pressurized media supplied from a source thereof;

5 drive linkage coupled between the rotation motor and the rotatably-supported body;

a first media line for delivering pressurized media to and discharging pressurized media from the first port of the rotation motor;

10 a second media line for delivering pressurized media to and discharging pressurized media from the second port of the rotation motor; and

a float system operable to place the rotation motor in a float condition to allow the rotatably-supported body to rotate toward a side load, the float system including -

a valve interposed between the first and second media lines, and

15 a control mechanism operatively coupled with the valve for selectively switching the valve between a closed position wherein the first and second media lines are substantially isolated from one another and an open position wherein the first and second media lines are in communication with one another to allow equalization of pressure
20 between the first and second ports of the rotation motor.

13. The rotation drive mechanism as set forth in claim 12, the valve comprising a pair of poppet-type solenoid valves in fluid communication with one another between the first and second media lines.

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14. The rotation drive mechanism as set forth in claim 12, the valve comprising a blocking valve interposed between the first and second media lines.

15. The rotation drive mechanism as set forth in claim 12, the control
30 mechanism comprising a switch for electrically controlling switching of the valve between the closed and the open position.

16. The rotation drive mechanism as set forth in claim 12, the pressurized media comprising hydraulic fluid.

5 17. The rotation drive mechanism as set forth in claim 12, further including a tilt switch operatively coupled with the control mechanism for preventing the control mechanism from switching the valve to the open position whenever the body is tilted in excess of a predetermined slope.

10 18. The rotation drive mechanism as set forth in claim 12, further including an indicator operatively coupled with the control mechanism for indicating when the control mechanism has switched the valve to the open position.

15 19. The rotation drive mechanism as set forth in claim 18, the indicator including an audible alarm or a visible alarm.

20. The rotation drive mechanism as set forth in claim 12, further including an electrical relay interposed between the control mechanism and the valve.

20 21. The rotation drive mechanism as set forth in claim 12, further including a flow control device positioned in-line with the valve for controlling a rate at which the valve allows equalization of pressure between the first and second ports of the rotation motor when the valve is switched to the open position.

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